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*People of the Ancient World*

# THE ANCIENT INCA

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### **The Inca: Children of the Sun**

By A.D. 1000, several small tribes had settled in the fertile mountain valleys 11,135 feet (3,393.9 m) above sea level near modern-day Cuzco. In spite of having different languages and customs, they lived in relative harmony for about two hundred years. Between 1150 and 1250, they were joined by a close-knit tribe that was searching for better farmland.

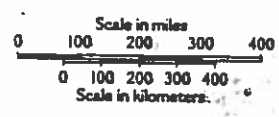
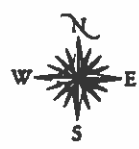
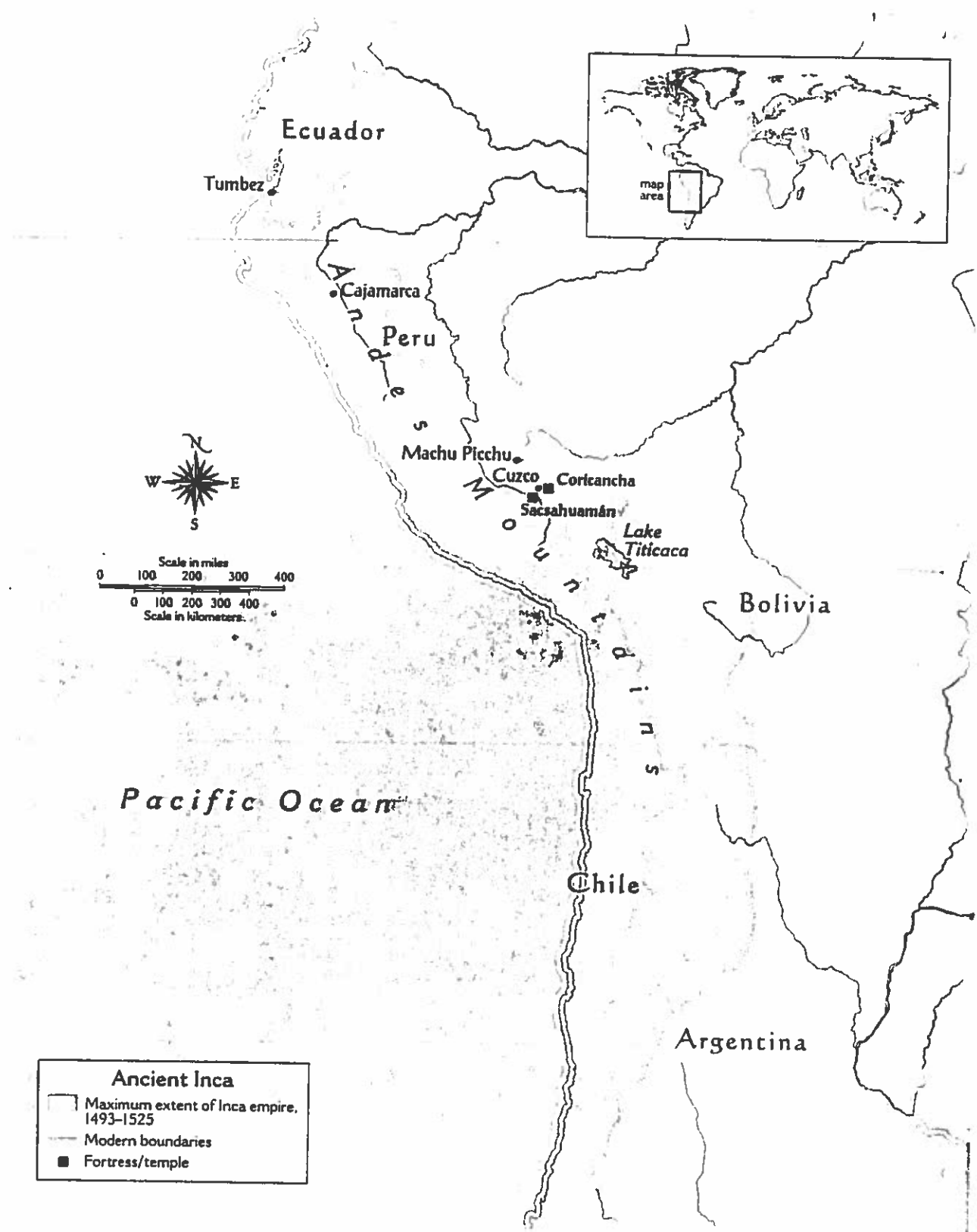
The newcomers set themselves apart from their neighbors by their bold manner, and spoke **Quechua**, which they called "the language of free men." Their word **Inca** meant "lord," and the tribe revered its leader as the *Sapa Inca*, the "only lord." Today, Quechua, as spoken by the ancient Inca, is the most common native language in Peru.

Although the Inca intermarried with other tribes, they considered themselves superior. They worshipped **Inti**, the sun, and believed they were **Intip Churín**, Children of the Sun, destined to rule over their neighbors. Around A.D. 1300, they began to subdue other groups in the Peruvian highlands by forging peaceful alliances with them or going to war against them.

The way of the Inca was not to merely dominate, but to improve on achievements made by the tribes they conquered. The Inca improved roads, bridges, and irrigation ditches. They developed crop-storage systems to feed people when crops failed. They skillfully administered the economic affairs of an expanding empire, and kept peace among the tribes they ruled.

### **Understanding the Past**

Why concern ourselves with a civilization that disappeared centuries ago? What does the past have to do with the present or the future? The history of humankind, beginning with its earliest origins, is the story of us all. As we inform ourselves about daily life,



- Ancient Inca**
- Maximum extent of Inca empire, 1493-1525
  - Modern boundaries
  - Fortress/temple



*Chapter I*

# LIFE AMONG INCA FARMERS

Because of the terrain, the Inca often carved farmland out of the hillsides.

As Inti lightened the sky behind the mountains, an Inca woman set out for a nearby stream with a clay water jar. While her husband and sons slept, she and her daughters joined other women from her *ayllu*. An *ayllu*, or kinship unit, might consist of fewer than a hundred members or more than a thousand.

When the jar was filled, the woman returned to her hut and added sticks of wood to a small clay fireplace. She set a pot of water to boil, stirred in cornmeal, and added chili peppers for flavoring. When the porridge was ready, at about six o'clock, the family gathered around a blanket spread on the earthen floor.

As breakfast was eaten it wasn't necessary to decide what work needed to be done, for the choice had already been

made by the *llamactu*, an Inca official. The previous evening, using a horn made from a conch shell, he'd announced to the ayllu which *chacras*, or fields, should be tended.

Raising crops on the steep slopes of the Andes Mountains presented several challenges. The soil was rocky and poor, and droughts were frequent. Also, when rain came, it could wash away a season's crops.

The Inca solved the problem by carving terraces, or steps, into the hillsides. A trench was dug horizontally across the face of the slope, earth was piled above it, leveled, and then held in place by a stone retaining wall. The soil was fertilized with human or animal waste, including *guano*, or bird droppings hauled up from the seacoast. If a hillside weren't too steep, the terrace could be more than 100 feet (30.5 m) wide. In steeper places it was as narrow as 3 feet (1 m).

When the family reunited in the evening they ate a second meal. It might be a bowl of *locro*, potato stew flavored with chili peppers and dried meat (the Inca didn't fry their food). At sunset, family members wrapped themselves in wool blankets, and then parents and children slept on the floor of their hut.

## What Being "Inca" Meant

The ancient Inca used the word "Inca" in two ways. First, it identified the tribe known by that name, which ruled over other groups in the Peruvian highlands. Second, it referred to each individual in the empire. However, only descendants of the original Inca tribe were true Inca. All others were Inca subjects, but were not Children of the Sun, or of royal blood.

## Extension of the Rocky Mountains

The Andes stretch like a 4,700-mile (1,432.6-km) spine down the coast of South America, from Colombia in the north to Chile in the south. These mountains, part of North America's Rockies, are formed of twin ranges called **cordillera** running parallel to each other. They provide the region with more than one climate. On the western edge, facing the Pacific Ocean, lies a desert so dry that not even cactus grows. Between the ranges, the climate of the **altiplano**, a treeless plain covered by sparse grass, is often mild. By contrast, snow never melts on the highest mountain peaks, 23,000 feet (7,010.4 m) above sea level. On the eastern slopes, rain-laden clouds from

the Pacific Ocean release moisture, creating the jungles of the Amazon River basin.



### Planting the Fields

Manco Capac, the "first Inca" of tribal myth, used a gold rod to mark the place where a new kingdom would be founded. At the start of planting season when it was time to sow crops, an Inca official—sometimes the emperor himself—commemorated Manco Capac's deed by turning the soil with a special digging

## Agricultural Zones

<i>Yunga</i>	The lowest zone, below 5,000 feet (1,524 m)	This warm, dry area is suitable for cultivating a variety of fruit trees, such as avocado, lemon, and lime.
<i>Quechua</i>	The middle zone, above 5,000 feet (1,524 m)	This area has moderate temperatures and plentiful rainfall. Foods grown here include potatoes, corn, beans, squash, chili peppers, tomatoes, peanuts, sweet potatoes, and <b>quinoa</b> , a barleylike grain.
Higher Elevations	Above 10,000 feet (3,048 m)	This area is too cold for agriculture. Farmers used it as a place for their llamas and alpacas to graze.

tool made of gold. Men and women then planted the fields together, which were divided into thirds: One-third for the Inca gods, one-third for the emperor and nobles, one-third divided among the farmers themselves. Boundaries between the thirds were marked by government officials. If anyone dared to move a marker, he or she was punished.

## Making Chicha

Chicha was made by older women who no longer worked in the fields. They chewed corn kernels into a paste, then spit the paste into large pottery jars filled with warm water. The mash was allowed to ferment for eight days. Then the brew was kept cool by partially burying the jars inside a family's hut.

The size of a peasant's plot depended on the number of people in his family. A married man received one *topo*, about 43,056 square feet (4,000 square meters). He received an extra strip for each son, half a strip for each daughter. When farmers finished tending to their fields, they did charity work for widows, orphans, or those too old to tend their own plots.

The fields of the gods were planted first, followed by those of the emperor and nobles. Then peasants planted their own. Men turned up the soil with a *taccla*, a foot plow made of wood (sometimes tipped with a bronze plate). As the earth was turned, women knelt to break it up with their hands or a *lampo*, a small hoe. It was backbreaking work, yet men and women sang as they labored, to the amazement of their Spanish conquerors. "These chants are very enjoyable, and can usually be heard a half-league away," observed Father Bernabe Cobo.

Between planting and harvesting crops, many tasks needed to be done. Men repaired the stone retaining walls of the terraces while women gathered fuel. Nearby forests had been cut down to clear land for farming, so they traveled long distances to find wood. Dried dung (manure) also was collected from the high pastures where llamas and alpacas grazed.



### **If Drought Threatened Crops**

If moisture didn't arrive at the right time and crops withered, rituals to bring rain were performed. Six llamas, only black ones, were tied up without food or water. When the animals' hunger and thirst became intolerable, they wailed in misery. The Inca believed the gods couldn't bear to hear such pitiful cries and would send rain. If none came, the llamas were sacrificed. If drought continued, human sacrifices, including children, were offered. Only when all measures failed did Inca officials open the *quollas*, or storehouses, to feed the starving people.



The potato was an important part of the diet of the Inca.

### **The Most Important Crops**

Potatoes and corn were the Incas' two most important crops because they could be preserved easily. Potatoes were dried in the sun, allowed to freeze at night, and then dried again the next day. The process was repeated until all the moisture was extracted, creating *chuño*, or freeze-dried potato. This product could be

### **The Size of a Baby's Fist**

Ancestors of the Inca discovered the *acsu*, the potato, growing wild in the Andean highlands and domesticated it about 2500 B.C. It was a dark, knobby tuber not much larger than a baby's fist, nothing like the large white vegetable of today. The Inca devel-

oped more than two hundred varieties of potato in colors including black, brown, red, and purple, and some were even speckled. Called *papa* by the Spanish, the potato was unknown in Europe until Francisco Pizarro introduced it after the conquest.

stored for four years. When soaked in water, it was ready to be used. Corn also was dried and then ground into meal.

The Inca ate no dairy products—no milk, cheese, or butter—for neither cattle nor goats were native to South America. Nor was meat a staple of the Inca diet. Meat, rarely eaten fresh, was cut into thin strips, dried, and then pounded even thinner between two stones. The finished product, called *charqui*, could be preserved indefinitely.

The *culi*, a small rodent native to the Andes (we call it a guinea pig), was the most dependable source of meat for the Inca. Guinea pigs were allowed to run loose in peasants' huts, ate leftovers from their owners' meals, and then became meals themselves.

### **An Ancient Drug**

Coca, a 3-foot (1 m) tall shrub growing in the moist river valleys of the eastern cordillera, was cultivated after people discovered that chewing its tealike leaves counteracted the fatigue caused by working in the oxygen-thin highlands. A walnut-sized quid, or

### **Forgotten Manuscript**

A Jesuit priest, Father Bernabe Cobo (1580–1657), came to Peru as a missionary in 1599. He learned Quechua and interviewed many subjects about their recollections of the old empire. He finished *History of the New World* in 1653. After his

death, the manuscript found its way back to his native Spain and lay unnoticed in an archive in Seville until 1790. An English translation of Cobo's work, published by the University of Texas Press, is an important resource for students of Inca culture.

# GROWING UP AMONG THE INCA

As a baby's birth approached, an Inca father fasted to aid a safe delivery for his wife and child. After the baby was born, a mother cut the umbilical cord with her thumbnail or a piece of broken pottery. Regardless of the weather, she set out for the nearest stream to wash the infant. Ice-cold water was said to make a child's arms and legs strong, yet mothers often warmed it first in their own mouths.

## **Children Equaled Wealth**

A miscarriage was considered a misfortune, because children who grew up to help their parents were considered a form of wealth. If a miscarriage seemed likely, a healer was called to prevent it. A ceremony was performed, including prayer, rubbing three fist-sized stones together, chewing coca leaves, and sacrificing a guinea pig.

Although children were highly valued, the birth of twins was an evil omen that required rituals and fasting to be performed to avert catastrophe. If a baby were deformed, it could be taken as a sign that his or her mother was unfaithful to her husband.

## Caring for Orphans

Although children were highly valued among the Inca, disease or death could prevent parents from raising and caring for them. If other family members couldn't take the children in, they weren't abandoned to their fate. The government provided orphanages where they were fed and clothed. Eventually, orphaned children became property of Inca nobles.

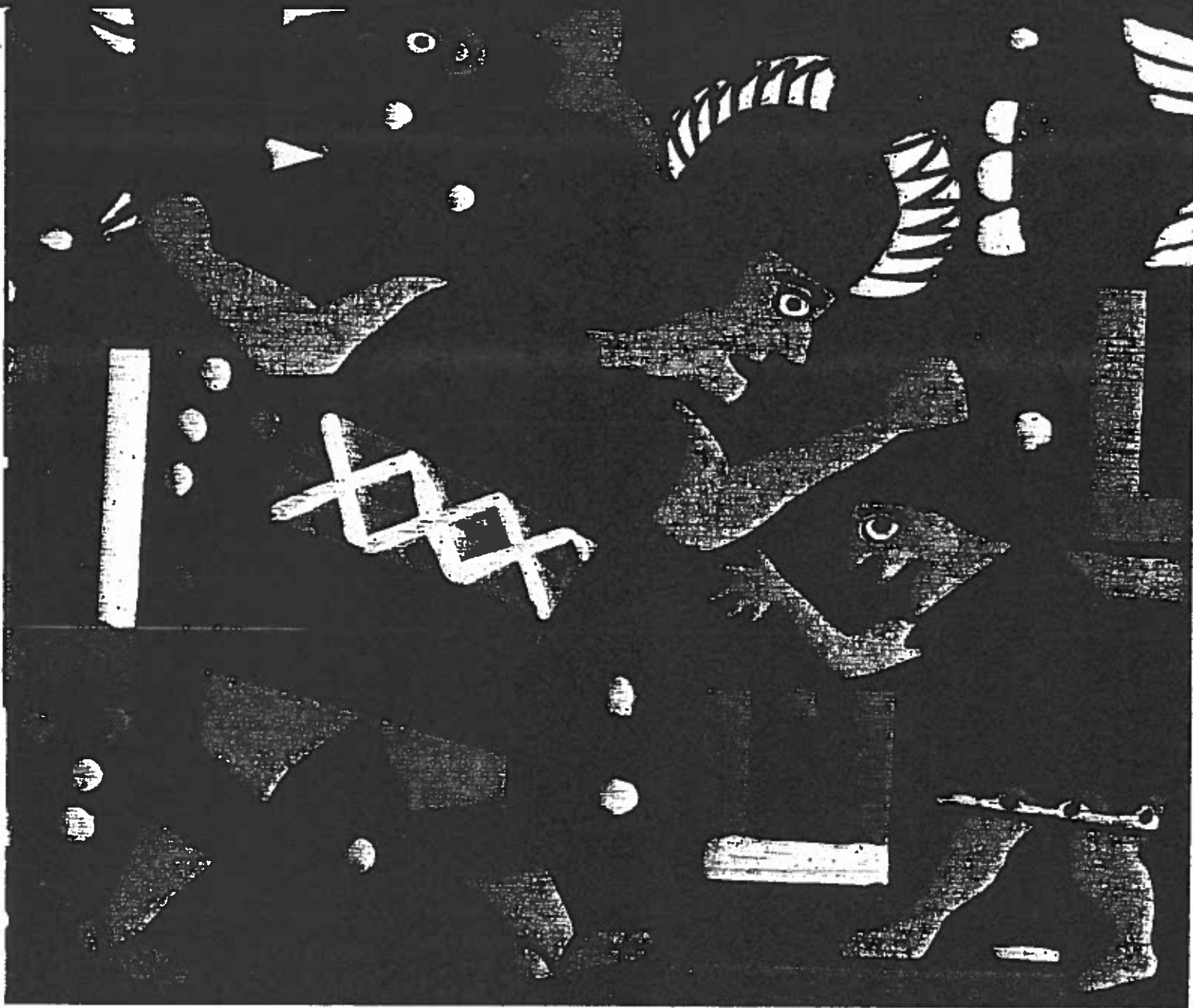
Some peasants believed that if a woman dreamed of a snake, her child would be a boy. If she dreamed of a toad, the woman would have a girl.

### Privileges Were Few

After birth, a baby was put in a *quirau*, or a cradle, strapped to his or her mother's back, and carried everywhere she went. Babies were breast-fed three times a day, but usually not more often, even if they cried. The Inca loved their children, but avoided treating them tenderly to prepare them for the harsh life that awaited them. Babies weren't given solid food until they were weaned at about two years of age, nor were they given names. The children were simply called *wawa*, or baby.

If a mother needed to put her baby down while she worked, a simple playpen was made by digging a hole in the ground to put the baby in. A pebble or stick might be added for entertainment, but play wasn't common for children who grew up in the highlands. By age three they often worked beside their parents at simple tasks.

Certain tribes flattened a baby's forehead, considered a mark of beauty. This was accomplished by placing small pieces of wood against the infant's forehead and tying them in place with a wool cord. To avoid causing the child discomfort, a mother tightened

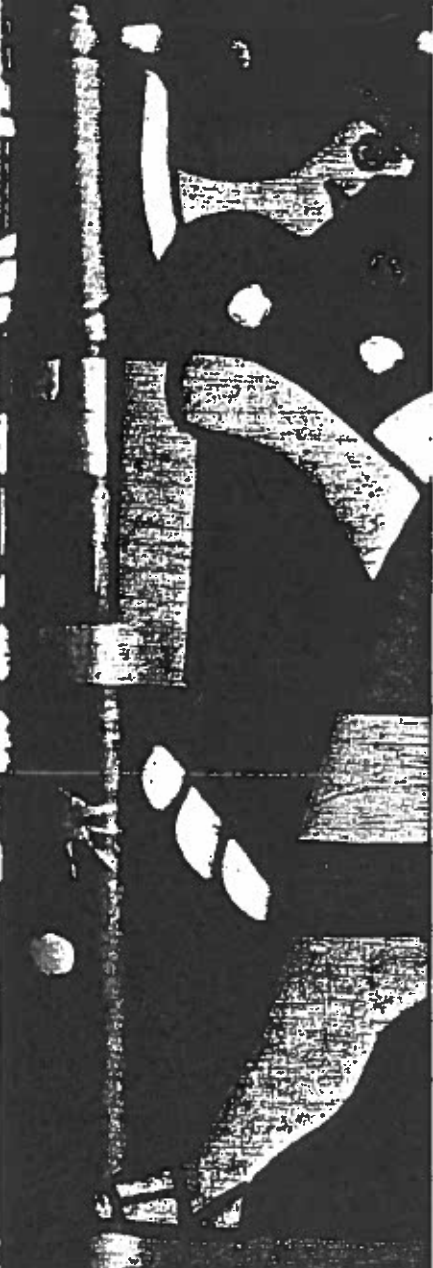


Most Inca parents did not coddle or spoil their children. A painting shows a child being scolded by a warrior.

the cord gradually until the proper shape was achieved at around three or four years of age.

### **A Child Receives a Temporary Name**

A *rutuchicoy* ceremony was performed at the time of a baby's first hair cut. According to Garcilaso de la Vega, the family's eldest male relative cut a lock of the child's hair and trimmed its fingernails. Other relatives also cut some hair and gave the child gifts.



Afterward, parents hid the hair and nails, for if they fell into the hands of a sorcerer, a spell could be cast on the child. The child was given a name, though not a permanent one. It might have something to do with the day of his or her birth, such as Thunder-on-Mountain for a boy, Flowers-Near-River for a girl.

Children in an ayllu were obedient because they learned three rules very early: *ama sua, ama llulla, ama cheklla*—do not steal, do not lie, do not be lazy. Thievery was rare, because not only would it be a crime against one's kinship group, but also against Inti, giver of all life.

### Coming of Age

When she was about thirteen, a girl began her *quicuchicuy*, a weeklong celebration beginning with three days of fasting. The girl's mother bathed her, braided her hair, and gave her new clothes and *ojotas*, or sandals. A permanent name was given to

her by her most important uncle, and relatives presented gifts. In return she honored the guests by serving food and chicha herself.

A boy's coming-of-age ceremony, or a *guarachicuy*, lasting three weeks, was more elaborate than his sister's. New garments were given to him. A llama was sacrificed in his honor, and its blood was smeared on his face. Relatives whipped the boy's legs daily to help him become strong and brave. He was given a *guara*, a breechcloth, and then took the name he would use for

## Growing Up in Two Worlds

Garcilaso de la Vega (1539–1616) grew up in two worlds, one of nobility (his father was the Spanish governor of Cuzco), the other of royalty (his mother was the granddaughter of the tenth Inca emperor). Vega was attracted to his mother's people and called

himself simply "the Inca." In 1609, his memoir of childhood, *Royal Commentaries of the Incas*, was published in Portugal. In 1688, it was translated into English, and is still an important resource for students of Inca history.

the rest of his life. It might be the name of his father or grandfather, or he could pick the name of a powerful creature in nature: Huaman (hawk), Asiro (snake), or Puma (lion).

After completing their coming-of-age ceremonies, boys and girls were considered to be adults. If they hadn't been chosen by Inca rulers for other destinies, they followed the work of their parents. If their parents were farmers, herders, or weavers, the young people became the same. Further education was frowned upon for most subjects, for Inca rulers believed knowledge encouraged people to question authority.

A metal sculpture is dressed in the clothing that was typically worn by young Inca women.



## Chosen Women

Certain girls, including daughters of the nobility, whose beauty had been noticed by Inca officials, were selected at age ten to become *acllacuna*, or Chosen Women. Such girls went to live in a compound dedicated to Inti, where they took vows of chastity. Under the guidance of *mamacona*, or older women, they learned how to prepare special meals and the art of weaving fine cloth. Later, a girl might be chosen as the mistress of the emperor, or, rarely, to be sacrificed to the gods. Either fate was a great honor for her and her family.

Chosen Women were guarded by sentries at the gates of the compound to prevent men from entering. If it were discovered that a girl had a lover, she was hung by her hair until she died, or was buried alive. Her companion suffered a



similar fate. The dying words of two accused lovers were recorded by Huaman Poma de Ayala:

“Take me with you, father condor.

Guide me, brother falcon.

Take my grief and my affection to my mother and my father.

Tell them what has happened to me.”

## Time to Marry

When young women were between age sixteen and twenty and young men about twenty-five, they were called together by an Inca official who matched them up. Marriage was a duty owed to the empire. Remaining single wasn't an option. In the case of



## Illustrator for the Centuries

Huaman Poma de Ayala, the son of an Inca noble, adopted the surname of a Spanish army captain after the conquest in 1532 and learned to write and speak Spanish. Between 1584 and 1615, he wrote *The First New Chronicle of Good Government*, a 1,100-page manuscript now

housed in the Royal Library of Copenhagen, Denmark. The document is important for its narrative, but even more for its 398 pen-and-ink drawings in which Poma depicted Inca daily life. Many archaeologists and historians borrow Poma's drawings to illustrate their own books.

persons with disabilities, they were paired with other persons with disabilities. For example, a person who was visually impaired married a person who was visually impaired, and a person who was hearing impaired married a person who was hearing impaired.

The couples usually weren't strangers to each other, for it was customary to be paired with someone from one's own ayllu. A young man and his parents walked to the bride's home, where her family gave their approval, and then everyone traveled to the home of the groom. The bride gave her prospective husband a wool tunic and a *llauto*, a headband, then the marriage was celebrated by feasting, dancing, and drinking quantities of chicha.

The government provided all newlyweds with a plot of land, and they were expected to produce children. Inca officials, as well as peasants, viewed children as wealth. Rarely, a commoner took more than one wife (emperors always did). If he did, only the first was regarded as the "principal wife." Any other was considered a "secondary wife." If a man's wife died, he put on a black cloak and didn't remarry for a year.

## Taxes in the Form of Work

Mit'a, a Quechua word meaning "turn of labor," was a tax paid in the form of work. Male members of each Inca household labored for the empire for a certain length of time each

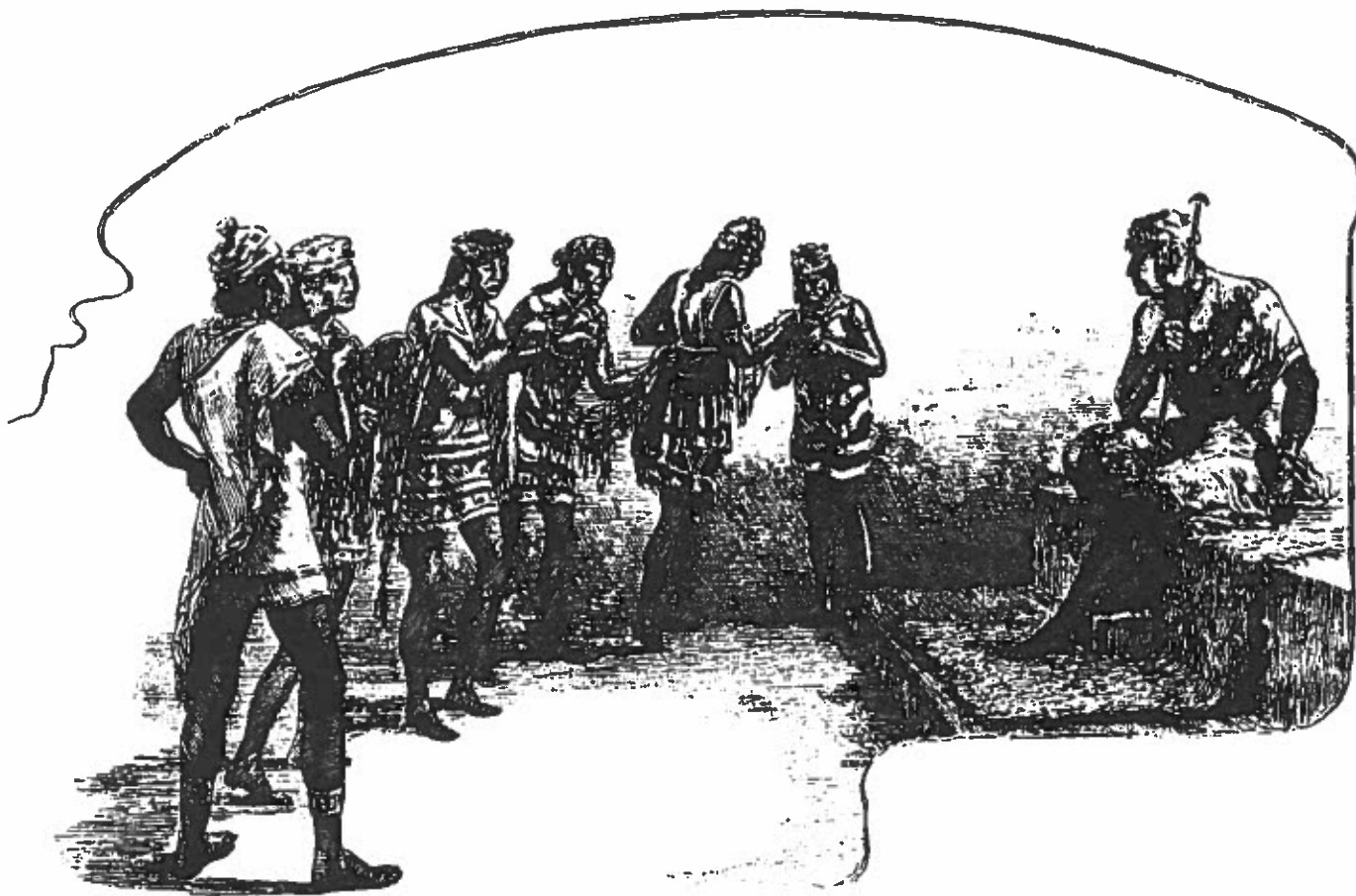
year. Men served in the army, worked in the mines, or built roads, bridges, or buildings. During a man's absence, members of his ayllu helped his family until he returned.

### Education Among the Nobles

The sons of nobles didn't automatically assume leadership positions in the empire. They were taught how to fulfill their duties by attending the **Yachahuasi**, or House of Learning, a university in Cuzco. At age fourteen, boys began four years of instruction by **amautas**, wise men. They studied the history of the empire, its laws, customs, myths, and how to use a **quipu**. Professional soldiers trained them in the art of war, the use of weapons, and strategic planning on a battlefield. When a student didn't perform well—no matter if he were a noble's son—he received ten blows from a wood paddle on the soles of his bare feet.

At examination time, students from the Yachahuasi fasted for a week, then raced barefoot up and down the mountains near Cuzco. They fought pretend battles with real weapons, which occasionally resulted in real deaths. Such deaths weren't considered tragic, but brought honor to the victim and his family.

Graduation took place in the main square in Cuzco. Young men were awarded a llauto, a narrow band worn around the forehead in which were fastened two feathers and a *canipu*, a silver disk. The size of the disk indicated whether the wearer belonged to the higher or lower nobility. His ears were pierced at a separate



The sons of nobles attended school in Cuzco called the Yachahuasi.

ceremony, entitling him to wear large earspools made of gold, silver, or wood. The spools were heavy. Eventually the wearers' earlobes stretched enough to touch their shoulders, causing the Spanish to call Inca men *orejones*, meaning "big ears."

### **Becoming a Royal Inca "by Privilege"**

Men who were not Inca royalty were regarded as *yanca ayllu*, of common blood. However, a man could become a member of the royal class by privilege. Incas-by-privilege were created from political necessity. There weren't enough royal-born Inca to fill all the government positions in the empire. Therefore, personnel were recruited from elsewhere. Some members of the Inca-by-privilege

## Administering Justice

Stealing from fields or from the emperor's storehouses was punishable by death. However, local governors couldn't execute a thief unless they had permission from a superior. When deciding on the punishment, officials took the age of the criminal into account. Other than death, punishments included beating, blinding, and torture. Some criminals died in prison in Cuzco.

## Administration of the Empire

The Inca were able to build a huge kingdom because they administered it so efficiently. The empire was divided into four *suyus*, or parts, each headed by an **apo**, or high government official. Each division was then divided into provinces of about twenty thousand households each. Below each apo were two provincial **curacas**, or governors, each in charge of ten thousand households. Below each curaca were two governors in charge of five thousand households, down to governors who managed only one hundred. An empire organized by tens, down to mere tenths, allowed Inca rulers to supervise the smallest details of life in the highlands.

Nothing escaped the attention of a governor whose only job was to oversee one hundred households. Thus, in an empire organized first by thousands, then several hundreds, down to a mere hundred, Inca rulers were able to supervise the smallest details of life in the highlands.

A ceremonial vessel shows what an Inca noble might have looked like.

## **Beneath the Ruins**

After the Spanish conquest, the Church of Santo Domingo was built on top of Coricancha, the most sacred temple of the Inca. In May 1950, an earthquake revealed the original Inca building. According to Pedro Cieza

de León, a stripe of gold "two hand-spans wide the four fingers thick" had decorated one wall, and the garden of the Coricancha was "planted with stalks of corn that were gold—stalks, leaves, and ears."

women. The structure of the Inca priesthood and the practice of confession were so similar to Catholicism that when the Spanish imposed their own faith on the Indians, it seemed almost familiar to them.

### **Temples of Worship**

The Coricancha, or Temple of the Sun, in the center of Cuzco, was built to demonstrate Inti's grandeur, no less than the great cathedrals in Europe were constructed to honor the God of Christians. The gateway and doors of the Coricancha were covered with sheets of gold. Each morning in the courtyard, Inti was welcomed by the Chosen Women, each of whom blew him a *mocha*, a ceremonial kiss.

### **Many Gods, Many Festivals**

The Inca honored so many gods that festivals occupied about 120 days, or nearly one-third, of each year. The emperor and his nobles, who supervised labor so strictly, considered the interruption of work to be worthwhile. Not only was it a way to satisfy the demands of religion, it was a way to reward peasants for their

efforts. Festival days also were a way to bind newly conquered tribes to the empire.

The two most important festivals each year were *Capac Raymi*, marking the December solstice, and *Inti Raymi* in June, a festival honoring the sun. The Spaniards believed such events were pagan festivals and forbade them. In 1930, however, a feast day of the sun was reestablished in Peru.

### **Worship of Ancestors**

As early as 5000 B.C., predecessors of the Inca began to mummify their dead, a practice that didn't evolve until 3000 B.C. in Egypt. Unlike the Egyptians, who embalmed the bodies of their dead, early coastal dwellers of what later became Chile preserved theirs by simply letting them dry out. Once the body was thoroughly dry, it didn't decay. In 1896, Max Uhle, a German archeologist, discovered the body of a twelve-year-old girl, sitting upright in a basket that had been made especially to fit her.

### **Heaven and Hell**

Garcilaso de la Vega said that the Inca believed in *hanana pachua*, heaven, and *uca pacha*, hell. A person's conduct in his or her earthly life determined what happened after death. If a person went to heaven, life was very much like it was on earth,

except he or she did not have to work as hard, and there was always plenty of food. Wicked people went to hell, deep underground, where they were always cold, had only stones to eat, and lived in eternal darkness.



### **Prayer, Sacrifice, and the Afterlife**

The Inca didn't kneel to pray, as do many modern worshippers. An Inca stood as upright as possible, arms stretched straight out in front, palms turned upward. The person kissed the air loudly, then noisily kissed the fingertips to attract the attention of whatever god he or she was praying to.

Sacrifices to the gods could take many forms. For the most important events, a llama was chosen. A cui, or guinea pig, was acceptable for lesser needs, as were small statues made to look like humans or animals. Fruits, vegetables, and coca were common offerings. Fine clothing was appropriate, as were brightly colored feathers.

If a person had little to give, a pebble, a seashell, or an old rag was offered up. If one had nothing at all, one pulled hairs from his or her own eyelashes or eyebrows. A simple offering was better than none. As Father Cobo wrote, the Inca "used every possible way to show their devotion and affection" for their gods.

Incas prepare animals for sacrifice during a religious ceremony.

## Built to Endure

The Inca adapted the stonemasonry techniques of earlier South American cultures for their own use, particularly those of craftsmen from the Lake Titicaca region. It's a tribute to the engineering skills of such ancient artisans that Inca buildings have

endured for more than five hundred years. In 1991, a severe earthquake shook the Colca Valley of southern Peru, nearly leveling the village of Macas. When the dust settled, survivors could see the buildings of the Inca were still standing.

Garcilaso de la Vega observed, "you could not slip the point of a knife between two of them." The edges of some stones were beveled to further enhance their beauty, creating a building that was "a perfect whole . . . there is no detail that shocks the eye." Not only were such buildings beautiful in themselves, they sometimes conformed to the land. A barracks built on a steep hillside at Ollantaytambo proceeds in steps up the slope.

Although stones used in buildings weren't fitted with mortar, the Inca repaired damage to the walls with a sticky, water-repellent red clay called *llanco*, common to the Andes. The houses of peasants, usually made of a combination of adobe bricks and stone, didn't survive the centuries as well due to the damp highland climate. Yet in dry areas of the empire, a few of these simple huts can still be found.

Inca masons didn't use mortar (sand, water, and lime) to cement stones together. They cut stones to fit so tightly no mortar was needed.

### The Craft of Inca Masons

To create a tight fit between one stone and another Inca masons used tools made either of harder stone than the ones to be carved or chisels made of bronze. Ancestors of the Inca had already used



## How the Inca Did It

A Swiss architect, Jean-Pierre Protzen, studied how Inca walls were built. Then he spent several months duplicating Inca masonry techniques. At a former Inca quarry 20 miles (32 km) from Cuzco, he demon-

strated how cobbles—small, black stones found in river beds weighing between 2 pounds (0.9 kilograms) and 20 pounds (9 kg)—were used to smooth the rough edges of larger stones until they fit together perfectly.

this technique in a building at Tiahuanaca, where the natural irregularities of a single stone, which measured 38 feet (11.6 m) long, 18 feet (5.5 m) high, and 6 feet (2 m) wide, were chiseled by working the top into a slightly concave shape. The bottom of the stone to be set on it was then chiseled into a convex shape, achieving a closer fit than if each were planed smooth.

Small, regularly spaced holes can be seen in the stones of certain buildings. These holes held wood or bronze pins used to attach solid gold plates to the wall. When the Spaniards dreamed of cities of gold in the highlands, they probably never expected to find buildings that were actually gold-plated.

The design of Inca buildings was the same, no matter their size. They consisted of a single rectangular room without interior walls, with a door positioned in the center. If a building were constructed on a steep hillside, a second floor sometimes was added that was entered from a doorway on the upper level. Steep roofs, the better to shed rain, were made of wooden beams covered with thatch, but haven't survived the centuries.

The shape of windows and doors in Inca buildings was unique. The openings weren't rectangular, but trapezoidal,

narrower at the top than at the bottom. Father Cobo also noted that the stones weren't set upon each other in a precisely vertical manner but inclined slightly inward, probably making the walls more resistant to earthquake damage.

### House of the Speckled Hawk

In 1439, Pachacuti, the ninth and most ambitious Inca emperor, built a fortress dedicated to Inti on the top of a hill called Sacsahuamán ("Speckled Hawk") overlooking Cuzco. The project took more than thirty years to complete, required the labor of twenty thousand men, and was a way for subjects to pay their mit'a tax. Such workers came to the capital from the provinces. If one became sick, another from the same province took his place. Inca rulers understood human nature: to reduce workers' homesickness, men from the same province were housed together in government barracks.

According to Garcilaso de la Vega, Pachacuti's project commenced as four thousand men cut stone in a quarry roughly 45 miles (72.4 km) from Cuzco. Stones of various size were pried loose by wedging bronze crowbars into natural fault lines in the rock. Sometimes fault lines were wedged with dry wooden blocks, which were then soaked with water. The wet blocks expanded, widening the cracks and making it easier to pry the stone out.

The Inca had no oxen, pulleys, or wheeled carts to help them haul the stones

Pachacuti had Sacsahuamán built to honor Inti, the sun god.



## Tired Stones

Not all the stones made it from the quarry to Sacsahuamán. Some, called *piedras cansadas*, or "weary stones," were left along the way. Inca laborers said the stones had become too tired to continue their long journey from the quarry.

up the mountainside. A series of earthen ramps were built. Some of the stones were huge, weighing 90 to 120 tons and measuring 13 feet (3.9 m) in height. Six thousand men using logs as rollers and cables woven of leather and reeds hauled the stones from ramp to ramp up the slope. Once, a huge stone slipped, killing hundreds of workers below. Father Cobo observed the use of the ramp technique firsthand, for when the Spaniards built a cathedral in Cuzco, Inca workers were allowed to use their own building methods.

Garcilaso de la Vega estimated that one wall of Sacsahuamán was 200 spans, or 150 feet (45.7 m) in length. A span is about 9 inches (22.8 cm), the length between the tip of a thumb and the tip of the little finger of an outspread adult hand. "I often went to play at the fortress with boys of my own age . . . [but] we did not dare to go farther than the sunlight itself," he recalled. They were afraid of getting lost, for the building contained many rooms and narrow alleys that ran in all directions.

When Sacsahuamán was finished, it was dedicated to the sun. Only persons of royal birth, true descendants of Inti, were allowed to enter. At dawn, when the valley below was filled with morning gloom, the east side of Sacsahuamán caught the first light and was called *intip llocsina*, "place where the sun springs up." The Spaniards had no regard for Inca heritage, however.

The Sacsahuamán fortress is located northwest of Cuzco on top of a hill.

They dismantled Sacsahuamán and used the stones for their own buildings in Cuzco.

### **Bridging the Empire**

Road builders throughout the highlands faced engineering challenges. There were many rivers and streams to be crossed, some flowing through deep gorges or across swampy marshes. The Inca never discovered the use of the arch and weren't able to use stone to span rivers. This didn't prevent them from getting where they needed to go.

If a suspension bridge was needed to span a gorge, stone pillars or sturdy wooden towers were mounted on either side. A pair of heavy cables made of reeds or ichu grass—Father Cobo said such cables were as thick as a boy's body—were attached to the towers. The floor of the bridge was made of braided branches. To ensure safety, cables and flooring were replaced every year. One such bridge, 118 feet (35.9 m) above the Apurímac River north of Cuzco, measured 200 feet (60.9 m) from bank to bank.

If the gorge was narrow, an *oroya*, a primitive cable car, was used. It consisted of a basket made of reeds, large enough to hold a man, attached to a heavy rope made of vines connecting one side of the gorge to the other. Men on one side pulled the basket across. If no basket was available, Cobo said the traveler himself was tied to the rope and then hauled to the opposite side.

Pontoon bridges, or floating bridges made of totora reeds, could be used to cross streams if the current wasn't too swift. Smaller streams were managed by placing narrow saplings across them. When a swamp needed to be crossed, a causeway was built using large blocks of stone to raise the roadbed above the water level. Stone culverts then kept the area drained.

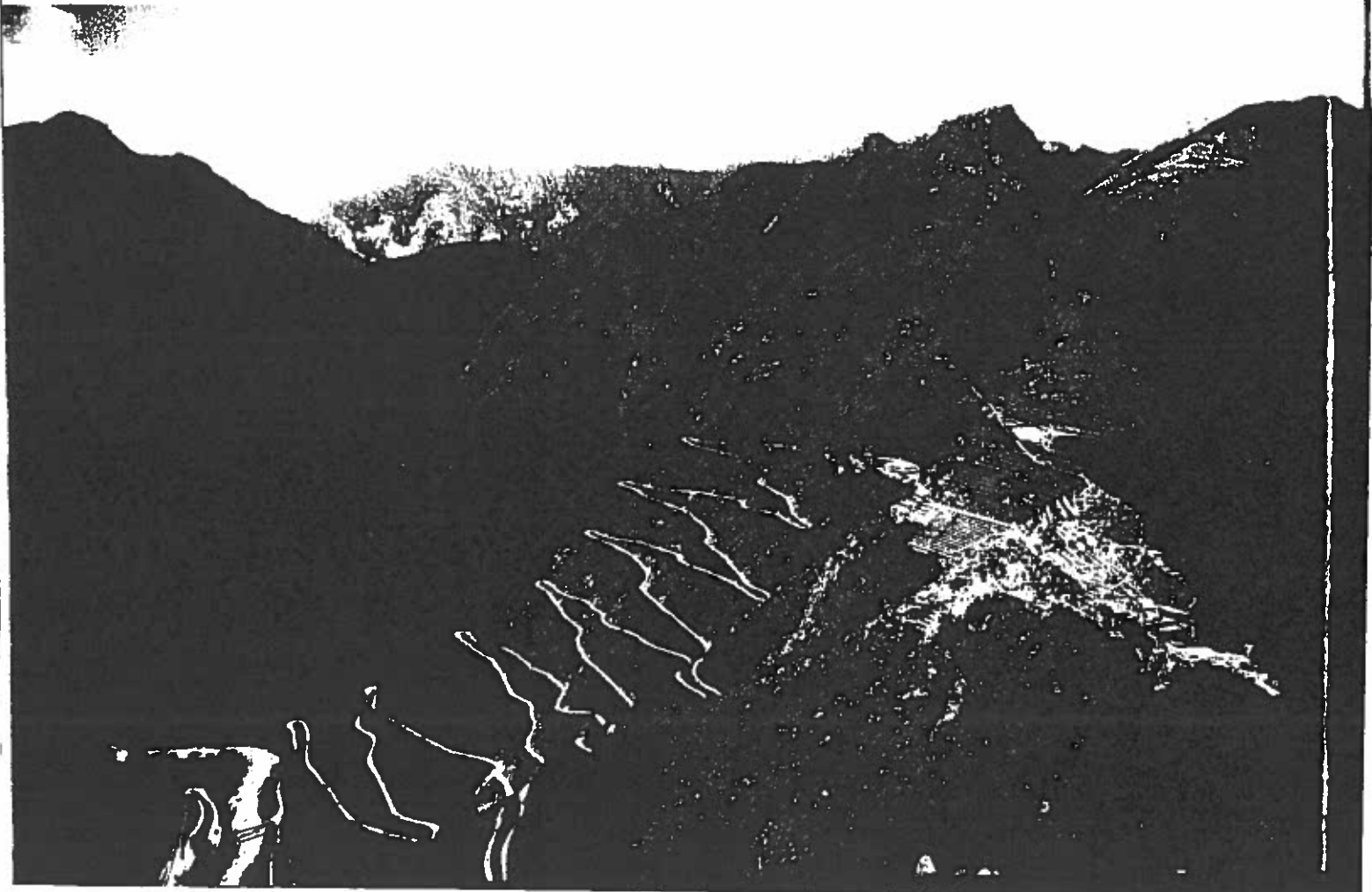
**The Inca built numerous bridges, such as this one, throughout the Inca Empire.**

### Roads to Match the Empire

The Inca built the longest, most elaborate road system of any ancient culture. They constructed more than 14,000 miles (22,530.8 km) of paved roads that have been often compared to those of the Romans. As was true of many aspects of Inca life, these roads traversing deserts, jungles, rivers, and mountains were improvements on ones built by earlier cultures, especially the Chimu and the Huari.

The roads built by the Inca were narrow and winding. They did not need wide roads because they did not use carts or wagons.

The lowland road along the coast, 3,000 miles (4,828.3 km) in length, began in the north at the Gulf of Guayaquil in Ecuador, ending at the Maule River in Chile. The highland road, also called *capac-nan*, the royal road, was nearly 4,000 miles



## Chasquis: Mountain Messengers

The wheel was never discovered by the Inca. Therefore, Inca roads were built without concern for carts or wagons. Portions of the highland road were as steep as ladders and as narrow as footpaths, and included staircases. **Chasquis**, men who ran 15-mile (24-km) relays, used these highways to deliver messages throughout the empire, sometimes covering 250 miles (402 km) per day. This system allowed Inca emperors to be informed swiftly about what went on even in the most remote corners of the empire.



(6,437.4 km) long. It began near Quito, passed through Cajamarca and then Cuzco, on into high mountain passes in Bolivia, ending near Tucumán, Argentina. Shorter roads branched off the two main ones, creating a network that left no part of the empire isolated.

Inca roads were paved with stone. Large ones were set at intervals to mark the distance traveled. **Tambos**, or rest stops, spaced every 15 to 30 miles (24 to 48 km) included corrals for llamas. Caretakers at these sites kept corn, beans, and chuño available for travelers. For their time, Inca roads were as agreeable as modern interstates.



## *Chapter IX*

# FALL OF THE INCA EMPIRE

The Inca Empire collapsed almost five centuries ago. Yet the word "Inca" brings to mind not only a kingdom in Peru but the name of the suncasapa, the "bearded one" who crushed it. The bearded one is known to us today as Francisco Pizarro, the Spanish conquistador.

Pizarro was born about 1471 in Extremadura, Spain's poorest province at the time. He never learned to read or write, and worked on a pig farm as a boy. When grown, his future looked as bleak as Extremadura's landscape. Men like Pizarro sought better lives by enlisting in the Spanish army, but the pay was poor, and Pizarro didn't advance in rank. He began to pay heed to stories about a "new world," where riches waited for those willing to take them.

### **Quest for Gold**

In 1502, Pizarro boarded a ship bound for Hispaniola, a Spanish colony. In 1509, he explored modern-day Colombia, then crossed the Isthmus of Panama with Vasco Núñez de Balboa.

## New Colonies in a New World

In the late 1400s, two events changed Spain's destiny. Christopher Columbus discovered the New World, and the Moors (Muslims), who'd occupied

Spain for centuries, had been driven out. Spain turned its attention westward, becoming the first European nation to establish colonies in the Americas.

He settled in Panama, acquired land, and became the city's *alcaide*, or mayor—yet riches eluded him.

Pizarro joined Diego de Almagro in 1524 to explore the coast of South America. No kingdoms of gold were discovered. In 1526, he set out again, this time capturing three Indians who wore gold and silver ornaments and later became his translators.

In 1527, when he reached the city of Tumbez on the coast of Peru, Pizarro sent an emissary ashore to meet the local governor, who told of cities high in the Andes where gardens were filled with gold and silver flowers. Pizarro returned to Panama to recruit a larger force, but when the governor refused to provide money for one, Pizarro sailed for Spain to plead his case before King Charles V. While at court he met another explorer, Hernando Cortés. Pizarro listened carefully as Cortés told how he'd conquered the Aztecs of Mexico.



The arrival of Francisco Pizarro was the beginning of the end for the Inca Empire.